

Effect of Satisfaction With a Dental Appearance on the Psychosocial Impact of Dental Aesthetics Among Adolescents in Saudi Arabia: A Cross Sectional Study.

Passent Ellakany (✉ pellakany@iau.edu.sa)

Imam Abdulrahman Bin Faisal University College of Dentistry <https://orcid.org/0000-0002-2995-8111>

Shaimaa Fouda

Imam Abdulrahman Bin Faisal University College of Dentistry

Maram Alghamdi

Imam Abdulrahman Bin Faisal University College of Dentistry

Eman Bakhurji

Imam Abdulrahman Bin Faisal University College of Dentistry

Research article

Keywords: Psychosocial impact, PIDAQ, Dental esthetics, Adolescents, Dental self-confidence, Smile satisfaction

Posted Date: September 9th, 2020

DOI: <https://doi.org/10.21203/rs.3.rs-55567/v1>

License: © ⓘ This work is licensed under a Creative Commons Attribution 4.0 International License. [Read Full License](#)

Version of Record: A version of this preprint was published on March 23rd, 2021. See the published version at <https://doi.org/10.1186/s12903-021-01509-z>.

Abstract

Background: Dental appearance affects facial beauty, social interaction and psychological well-being particularly among adolescents. The aim of the current study was to investigate the effect of dental appearance satisfaction on the psychosocial impact of dental esthetics among Saudi adolescents.

Methods: A cross-sectional study was conducted in the Eastern Province of Saudi Arabia among students attending intermediate and high schools. Data was collected using the translated Arabic version of psychosocial impact of dental esthetics questionnaire (PIDAQ) and demographic variables including; gender, age, school grade, and parental level of education. Statistical analysis was performed by using logistic regression to assess the effect of demographical variables on PIDAQ and its domains at 5% significance level.

Results: Females and participants' fathers' university education were statistically significantly having higher PIDAQ and aesthetic concern. Females were 70%, and those with fathers' university education were 22% more likely to have a negative psychological impact. Females and those with mothers' university education were less likely to have positive dental self-confidence.

Conclusions: Most of adolescents exhibited satisfaction with their own smiles. Smile dissatisfaction in the remaining participants was related to teeth alignment, color and shape. Females and participants with fathers' university education exhibited higher psychosocial impact than males and those with or without school education.

Background

Oral health evaluation methods focus mainly on dental diseases, while patients' insight about their oral well-being, including functional as well as emotional and social factors, are not evaluated [1]. Patient perspective is important in determining treatment needs and to supplement traditional clinical evaluation [2]. Treatment evaluation should incorporate several health care aspects including; treatment efficiency, cost, quality of life enhancement, patient's satisfaction and improved self-image [3].

Quality of Life (QoL) tools have been developed to meet the growing awareness of the multidimensional nature of oral health and to amend the deficiency of the normative methods. Several oral health related quality of life measuring tools are being used to evaluate the patients' emotions, functioning and acceptance of their oral status [4]. Dental appearance is an essential factor of facial beauty and it can influence person's assumption about one's characteristics. It was suggested that good dental appearance is a prerequisite to get a prestigious job in some professions [5]. The color of teeth is a crucial factor for an esthetic smile. Discoloration of one tooth may be more obvious and adversely affects esthetics compared to generalized discoloration [6]. Body image is a great concern of adolescents. It affects psychological and social adaptation as well as educational achievement [7,8].

The Psychosocial Impact of Dental Aesthetics Questionnaire (PIDAQ) was developed to evaluate self-perception of dental aesthetics and evaluate the psychosocial influence of dental aesthetics in adolescents seeking treatment [9]. It is a validated self-rating tool that measures important aspects of the oral health-related quality of life (OHRQoL), Dental Self-confidence", "Social Impact", "Psychological Impact", and "Aesthetic Concerns" [9]. Social impact measures the possible problems that could be endured by an individual in social situations due to unpleasant dental appearance while psychological impact measures the feeling of sadness or inferiority in comparison to others. Aesthetic concern involves data related to the concern or disapproval caused by one's dental appearance when an individual looks in a mirror or sees himself in photographs or videos [10].

Dentofacial esthetics has a great impact on social interaction and psychological well-being. Oral health condition, particularly satisfaction with appearance which might cause embarrassment in social contacts, affects the quality of life [7]. Thus, the aim of this study was to investigate the satisfaction with dental appearance and its relation to dental self-confidence (DSC), social impact (SI), psychological impact (PI) and aesthetic concern (AC) using PIDAQ administered to a sample of adolescents in Saudi Arabia. The null hypothesis was that the psychosocial impact, color and alignment of teeth and the esthetic perception of patients are not affected by gender and educational level of parents.

Methods

A cross-sectional study including male and female students attending intermediate and high schools (7th to 12th grades) with an age range from 12-17 years old was held in the Eastern Province of Saudi Arabia. The study was conducted in three different cities: Dammam, Khobar and Jubail. Students were included in the study if they: 1) had their parents'/ legal guardian's approval, 2) assented to participate, 3) had no medical or psychological problem affecting their responses. The study was approved by the Research ethical committee at the College of Dentistry, Imam Abdulrahman Bin Faisal University (EA#201905). Consent forms were sent to the school principals prior to data collection day and were signed and returned by the participants' legal guardians.

Sample size was estimated prior to the conduct of the study. The estimation was based on the following assumptions: proportion of the population having negative PIDAQ is 50%, with 95% confidence intervals, and 2% margin of error (www.calculator.net). The study had to have 2401 respondents. To accommodate for a possible 30% drop out and non-response, a total of 3500 intermediate and high school students from 13 schools were invited to participate in the study. School selection was based on a random list provided by the Ministry of Education from the three different cities.

Data collection used the standardized questionnaire measuring the Psychosocial Impact of Dental Aesthetics (PIDAQ) [5,9]. Responses were scored as yes or no for PIDAQ items in the questionnaire. The participants were requested to evaluate their self-satisfaction towards their smiles and to select the specific smile components which caused them to feel dissatisfied.

In addition to PIDAQ items the survey included demographical variables such as gender (male, female), age (years), grade (intermediate, high school), father's and mother's level of education (no school or school education, university education).

The survey was translated into the Arabic language by two proficient translators creating an initial draft that suits Saudi Arabia culture [1]. This initial draft was back-translated into English by both translators independently. Review of the draft was done by a committee consisting of two prosthodontists and a specialist in oral health assessment that are fluent in English. The Arabic version of the survey was tested on a sample of 20 adolescents attending intermediate and high schools in the city of Dammam (Saudi Arabia). Each adolescent answered the questionnaire independently and the time used in filling the questionnaire was recorded.

Statistical Analysis:

IBM SPSS Statistics for Windows, Version 20.0 (Armonk, NY: IBM Corp.) was used to analyze the data. The DSC, SI, PI, AC scores were calculated by summing the participants responses from the corresponding question items of each domain in the questionnaire. Additionally, the total PIDAQ score was calculated from the sum scores of the subdivisions AC, PI, SI and the reversed scores of the positive domain DSC. The scores of all domains were then dichotomized based on the median into low and high impact. The low PIDAQ, PI, SI, AC scores reflected no negative psychosocial impact, while the high PIDAQ scores reflected high negative psychosocial impact. The reverse is true (low means negative and high means positive) for the DSC since it is a positive measure. Frequencies (N) and percentages (%) were calculated for categorical variables while mean (M) and standard deviation (SD) were calculated for continuous variables. Simple (unadjusted) and multiple (adjusted) logistic regressions were performed to assess the effect of demographical variables on PIDAQ and other domains. All analyses were performed at 5% significance level.

Results

The survey was distributed to 3500 students. Of the distributed surveys, 2637 were completed and returned with a response rate of 75.34%. Table 1 presents the demographic distribution of the study participants. About two thirds of the study respondents were intermediate school students (63%), and mostly were females (62%) with a mean age of 14.52 ± 1.78 years old. Based on parents' level of education, a higher percentage of participants' fathers had university level of education (50.6%) compared to their mothers (41.7%).

Most of the participants were satisfied (37.4%) or somewhat satisfied (42.5%) with their smiles compared to only 20% who were not satisfied with their smiles. A majority of the participants did not hide their smiles (71%), were not aware of other people's views of their smile (75.6%), and their smile did not make them self-conscious in the presence of their family or friends (81.4%). However, 68% of them were not comfortable showing their teeth when smiling, 57% did not like to display their teeth in the mirror, photographs or videos, and 93% wished their teeth look better. On the other hand, 46% of respondents were happy with their smiles and 38% reported that their teeth were not the reason for their smile dissatisfaction (table 2).

Regarding the reasons for smile dissatisfaction among the study participants, figure 1 presents different predetermined reasons for smile dissatisfaction from PIDAQ. Tooth alignment and tooth color were the most cited reasons for adolescents' dissatisfaction about their smile, 34% and 33%, respectively. While 22% did not like the shape of their teeth. On the other hand, tooth size (5%), gingival color or position (4%), or lip shape (2%) were the least selected reasons for smile dissatisfaction.

The univariate and multiple logistic regression models predicting high psychosocial impact of dental aesthetics (PIDAQ), low DSC, high SI, PI, and AC are shown in table 3. Gender was the main predictor in most models followed by father's level of education. Some models showed that mother's level of education was of importance as well.

Females were statistically significantly more likely to have higher psychosocial impact of dental aesthetics (PIDAQ) (unadjusted OR=1.68 95% CI 1.42, 1.97, adjusted OR=1.74 95% CI 1.45-2.10). Additionally, participants fathers' university education was statistically significantly associated with higher odds of having a psychosocial impact of dental esthetics (PIDAQ) (unadjusted OR=1.39 95% CI 1.18, 1.64, adjusted OR=1.34 95% CI 1.11, 1.61). Grade, age or mothers' education level of the participants did not significantly affect PIDAQ scores. Similarly, females were 70% and those with fathers having university education were 22% more likely to have negative psychological impact (PI) in the adjusted multivariate model (95% CI 1.41, 2.1 and 1.01, 1.47, respectively).

Regarding aesthetic concern (AC), females had 1.93 times the odds of having an aesthetic concern (AC) compared to males (95% CI 1.61, 2.31). Participants whose fathers possessed university education had 1.25 times the odds of having an aesthetic concern in comparison to those whose fathers had no school or limited school education (95% CI 1.04, 1.60).

In the DSC adjusted logistic model, gender and participants mothers' education were the only statistically significant predictors in the model. Females and those with mothers' having university education were less likely to have positive DSC (adjusted OR=0.69 95% CI 0.58, 0.83 and OR=0.76 95% CI 0.63, 0.91, respectively). Additionally, those with mothers having university education were 1.25 statistically significantly more likely to have higher

social impact (SI) in the unadjusted logistic model (95% CI 1.05, 1.45). Although the odds ratio for the mothers' education level does not change a lot in the adjusted model, it becomes non-significant (OR=1.18 95%CI 0.98, 1.41).

Discussion

Patient satisfaction and aesthetic concern are important factors that must be considered for a successful dental treatment [11]. The present study investigated the perception of dental appearance satisfaction among Saudi adolescents and its relation to DSC, SI, PI and AC using PIDAQ. The results of the present study showed that tooth color and alignment, gender and parents' educational level affected the psychosocial impact of dental esthetics thus the null hypothesis was rejected.

The results of the current study showed that 80% of students were satisfied or somewhat satisfied with their smiles. The main reasons for smile dissatisfaction were, related to teeth alignment (34%), followed by teeth color (33%), and then teeth shape (22%), while the rest of students didn't have any problem with their smiles. Similar results were mentioned in previous studies which showed that patients feel better and safer when they are pleased with the alignment and shape of their teeth, as teeth crowding causes negative psychosocial effects [11–14]. Therefore, malocclusion affects facial appeal causing an aesthetic impact on daily living of adolescents that could affect their quality of life [14] due to the link between appearance and social status and acceptability [15].

In line with our results, several studies found that patients' satisfaction with their dental appearance was affected by tooth color [7,11–13,16,17]. Thus, tooth discoloration could decrease patient's self-fulfillment and adversely affect his emotional state, which is why patients are seeking cosmetic treatments such as tooth whitening [16]. Contrary to our findings, Höfel et al. [18] reported that tooth color is not related to perceptions of facial attractiveness and thus satisfaction with dental appearance may not be related to facial attractiveness. This might be due to difference in the study design regarding age and the level of education of participants as they were dental experts in Höfel et al. [18].

Our results showed that females had higher PIDAQ and AC compared to males and lower DSC. Similarly, previous studies found higher dental concern and oral demands from females than males who are more comfortable with their dental appearance. This might be related to males' social life style [19,20]. Also, it was suggested that psychosocial factors are the main motivation that make females require esthetic treatment, therefore they had significantly higher psychological and social impact than males [20,21].

Other studies didn't find significant differences between males and females in regards to PIDAQ [22,23]. While Afroz et al. [5] determined that Indian men were significantly more concerned about their smile compared to women, and women were more satisfied with their dental aesthetics. The authors suggested that changes in the society and the impact of marketing made men concerned as women with their beauty and their physical appearance [5,22]. The diversity between these findings and the present study could have resulted from differences in age of participants and study methods [19] or due to the ethnic and cultural differences between the studied populations [24].

Obvious malocclusion, tooth color, and being a female are among the factors that increase AC [12]. These findings are in line with the present study which reported higher AC among females in comparison to males, as well as the effect of tooth alignment and color on patients' dissatisfaction with their smile.

Additionally, participants' fathers' university education was statistically significantly associated with a higher psychosocial impact of dental aesthetics (PIDAQ), high psychological impact (PI) and aesthetic concern (AC). Similarly, previous study suggested that individuals with higher education are aware of the effect of dental esthetics on social acceptance [25,26]. But these findings are in contrast to Akarslan et al. [17], who reported an association between the increase in education level and decreased dissatisfaction with dental aesthetics this might be related to difference in age and cultural attitude of participants.

In case of DSC, the results showed that females and participants with mothers' having university education expressed less positive DSC and high SI. These results are in agreement with previous reports that observed less self-confidence of girls compared to boys [27,28]. In contrast, Chen et al. [26] found that males compared to females, showed more adverse aesthetic attitude and dental self-confidence when anterior teeth were missing, and higher improvement of the social impact, aesthetic attitude and dental self-confidence after implantation [26]. This can be explained by the opinion that males are generally less stable psychologically and live more stressful social life than females [26].

Romero et al. [29] found that participants with university degrees presented higher scores on self-confidence than participants with school education. This might be attributed to the increase in maturity with age and knowledge which is in agreement with our results as our participants were from intermediate and high schools. But their parents' education might have raised the participants' needs and aesthetic expectations and decreased their smile satisfaction as participants are looking to reach the best esthetic outcome like their parental role models [30].

There is a strong correlation between dental treatment needs, especially esthetic treatments, and psychological satisfaction with dental appearance that is affected by poor tooth color and alignment [12,13], as this will have an important clinical significance in comprehending treatment needs of this age group particularly when planning cosmetic dental treatment satisfying patient's needs and expectations [12]. This comes in agreement with our results which showed that causes of smile dissatisfaction were related mainly to improper tooth alignment, color and shape.

The strengths of this study include the high response rate of participants from different areas of the Eastern Province. Hence, the results are representative of the adolescent population in the area of study. However, this study was limited to testing dental appearance satisfaction among adolescents therefore; the results of this study do not represent the older age groups and cannot be generalized to the whole population.

Further Long-term longitudinal studies are required to evaluate the effect of age, level of education, income, social status, and different conditions (physical and psychological) on the dental appearance satisfaction and Psychosocial impact of dental aesthetics.

Conclusions

Most of adolescents exhibited satisfaction with their own smiles while the rest were dissatisfied mainly because of their teeth alignment, color and shape. Females exhibited higher psychosocial impact than males, while males showed greater self-confidence in their dental aesthetics. Also, participants whose parents possessed university education exhibited higher psychosocial impact and esthetic demands than those whose parents did not possess higher levels of education. Dentists should pay more attention to these traits and to their significance when treating patients.

Abbreviations

PIDAQ: Psychosocial Impact of Dental Aesthetics Questionnaire

PI: Psychological Impact

DSC: Dental Self-Confidence

QoL: Quality of Life

OHRQoL: Oral Health-Related Quality of Life

SI: Social Impact

AC: Aesthetic Concern

EA: Ethical Approval

SD: Standard Deviation

N: Frequency

M: Mean

%: Percentage

OR: Odds Ratio

CI: Confidence Interval

Declarations

Ethics approval and consent to participate: Research ethical committee at the College of Dentistry, Imam Abdulrahman Bin Faisal University (EA#201905).

Consent for publication: Not applicable

Availability of data and materials: All data used and analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests: The authors declare that they have no competing interests.

Funding: The present study was self-funded

Authors' contributions: PE did the conceptualization; PE and EB performed the methodology; EB performed formal analysis and investigation; PE, SF wrote the original draft preparation; PE, SF, MA wrote - reviewed and edited; all authors revised the paper and approved the final version for publication.

Acknowledgements: Not applicable

References

1. Bourzgui F, Serhier Z, Sebbar M, Diouny S, Bennani Othmani M, Ngom PI. Adaptation and validation of the Moroccan Arabic version of the Psychosocial Impact of Dental Aesthetics Questionnaire (PIDAQ). *Saudi Dent J.* 2015;27:180-186.
2. Phillips C, Beal KN. Self-concept and the perception of facial appearance in children and adolescents seeking orthodontic treatment. *Angle Orthod.* 2009;79:12-16.
3. Mandall NA, Matthew S, Fox D, Wright J, Conboy FM, O'Brien KD. Prediction of compliance and completion of orthodontic treatment: are quality of life measures important? *Eur J Orthod.* 2008;30:40-45.
4. Montero J, López JF, Vicente MP, Galindo MP, Albaladejo A, Bravo M. Comparative validity of the OIDP and OHIP-14 in describing the impact of oral health on quality of life in a cross-sectional study performed in Spanish adults. *Med Oral Patol Oral Cir Bucal.* 2011;16:816-821.
5. Afroz S, Rathi S, Rajput G, Rahman SA. Dental esthetics and its impact on psycho-social well-being and dental self confidence: A campus based survey of north indian university students. *J Indian Prosthodont Soc.* 2013;13:455-460.
6. Dudea D, Lasserre JF, Alb C, Culic B, Pop Ciutrla IS, Colosi H. Patients' perspective on dental aesthetics in a South-eastern European community. *J Dent.* 2012;40:e72-81.
7. Onyeaso CO, Sanu OO. Perception of personal dental appearance in Nigerian adolescents. *Am J Orthod Dentofac Orthop.* 2005;127:700-706.
8. Claudino D, Traebert J. Malocclusion, dental aesthetic self-perception and quality of life in a 18 to 21 year-old population: A cross section study. *BMC Oral Health.* 2013;13:3.
9. Klages U, Claus N, Wehrbein H, Zentner A. Development of a questionnaire for assessment of the psychosocial impact of dental aesthetics in young adults. *Eur J Orthod.* 2006;28:103-111.
10. Klages U, Bruckner A, Zentner A. Dental aesthetics, self-awareness, and oral health-related quality of life in young adults. *Eur J Orthod.* 2004;26:507-514.
11. Samorodnitzky-Naveh GR, Geiger SB, Levin L. Patients' satisfaction with dental esthetics. *J Am Dent Assoc.* 2007;138:805-808.
12. Tin-Oo MM, Saddki N, Hassan N. Factors influencing patient satisfaction with dental appearance and treatments they desire to improve aesthetics. *BMC Oral Health.* 2011;11:6.
13. Al-Zarea BK. Satisfaction with appearance and the desired treatment to improve aesthetics. *Int J Dent.* 2013;2013:912368.
14. de Paula Junior DF, Santos NC, da Silva ET, Nunes MF, Leles CR. Psychosocial impact of dental esthetics on quality of life in adolescents. *Angle Orthod.* 2009;79:1188-1193.
15. Alkhatib MN, Holt R, Bedi R. Age and perception of dental appearance and tooth colour. *Gerodontology.* 2005;22:32-36.
16. Bersezio C, Martín J, Mayer C, et al. Quality of life and stability of tooth color change at three months after dental bleaching. *Qual Life Res.* 2018;27:3199-3207.
17. Akarслан ZZ, Sadik B, Erten H, Karabulut E. Dental esthetic satisfaction, received and desired dental treatments for improvement of esthetics. *Indian J Dent Res.* 2009;20:195-200.
18. Hofel L, Lange M, Jacobsen T. Beauty and the teeth: perception of tooth color and its influence on the overall judgment of facial attractiveness. *Int J Periodontics Restor Dent.* 2007;27:349-357.
19. Garg K, Tripathi T, Rai P, Sharma N, Kanase A. Prospective evaluation of psychosocial impact after one year of orthodontic treatment using PIDAQ adapted for Indian population. *J Clin Diagn Res.* 2017;11:ZC44.
20. Yi S, Zhang C, Ni C, Qian Y, Zhang J. Psychosocial impact of dental aesthetics and desire for orthodontic treatment among Chinese undergraduate students. *Patient Prefer Adherence.* 2016;10:1037-1042.
21. Dahong X, Xiangrong C, Ying L, Yusong L, Ying G, Yan S. Effect of incisor position on the self-perceived psychosocial impacts of malocclusion among Chinese young adults. *Angle Orthod.* 2013;83(4):617-622.
22. Wan Hassan WN, Yusof ZY, Shahidan SS, Mohd Ali SF, Makhbul MZ. Validation and reliability of the translated Malay version of the psychosocial impact of dental aesthetics questionnaire for adolescents. *Health Qual Life Outcomes.* 2017;15:23.
23. Palomares NB, Celeste RK, Oliveira BH, Miguel JA. How does orthodontic treatment affect young adults' oral health-related quality of life? *Am J Orthod Dentofac Orthop.* 2012;141:751-758.
24. Singh VP, Singh R. Translation and validation of a Nepalese version of the Psychosocial Impact of Dental Aesthetic Questionnaire (PIDAQ). *J Orthod.* 2014;41:6-12.
25. Graham R, Mihaylov S, Jepson N, Allen PF, Bond S. Determining "need" for a Removable Partial Denture: A qualitative study of factors that influence dentist provision and patient use. *Br Dent J.* 2006;200:155-158.
26. Chen P, Yu S, Zhu G. The psychosocial impacts of implantation on the dental aesthetics of missing anterior teeth patients. *Br Dent J.* 2012;213:E20.
27. Bellot-Arcís C, Ferrer-Molina M, Carrasco-Tornero Á, Montiel-Company JM, Almerich-Silla JM. Differences in psychological traits between lingual and labial orthodontic patients: Perfectionism, body image, and the impact of dental esthetics. *Angle Orthod.* 2015;85:58-63.
28. Jung MH. Evaluation of the effects of malocclusion and orthodontic treatment on self-esteem in an adolescent population. *Am J Orthod Dentofac Orthop.* 2010;138:160-166.

29. Romero-Maroto M, Santos-Puerta N, González Olmo MJ, Peñacoba-Puente C. The impact of dental appearance and anxiety on self-esteem in adult orthodontic patients. *Orthod Craniofacial Res.* 2015;18:143-155.
30. Dubow EF, Boxer P, Huesmann LR. Long-term effects of parents' education on children's educational and occupational success: Mediation by family interactions, child aggression, and teenage aspirations. *Merrill Palmer Q.* 2009;55:224-249.

Tables

Table. 1 Characteristics of study participants. (N=2637)

| Study variables | N (%) |
|--|------------------|
| Grade | |
| Intermediate School | 1662 (63) |
| High school | 975 (37) |
| Gender | |
| Male | 996 (37.8) |
| Female | 1641 (62.2) |
| Father's education level (N=2343) | |
| No/school education | 1157 (49.4) |
| University education | 1186 (50.6) |
| Mother's education level (N=2391) | |
| No/school education | 1395 (58.3) |
| University education | 996 (41.7) |
| Age (years) | Mean ± SD |
| | 14.52 ± 1.78 |

Table. 2 Distribution of study participants' responses to PIDAQ questions. (N=2637)

| Questions | Satisfied | somewhat satisfied | Not satisfied |
|---|--|--------------------|----------------------------|
| | 1. How much are you satisfied with your smile? | 987 (37.4) | 1121 (42.5) |
| | Yes | | No |
| 2. Have you noticed that you hide your teeth when you smile? | 775 (29) | | 1872 (71) |
| 3. Are you comfortable with showing your teeth while smiling? | 1805 (68.4) | | 832 (31.6) |
| 4. Do you like your teeth display in mirrors, photographs and videos? | 1500 (56.9) | | 1137 (43.1) |
| 5. Have you perceived notion about other people's views of your smile? | 643 (24.4) | | 1994 (75.6) |
| 6. Does your smile make you self-conscious in presence of family and friends? | 490 (18.6) | | 2147 (81.4) |
| 7. Do you wish that your teeth looked better? | 2446 (92.8) | | 191 (7.2) |
| | Yes | No | Happy with my smile |
| 8. Are your teeth the reason for your dissatisfaction with your looks? | 417 (15.8) | 999 (37.9) | 1221 (46.3) |

Table. 3 Logistic regression models predicting PIDAQ and its various components by demographical variables.

| | OR (95% CI) | | | | | | | | | |
|---------------------------|----------------------|----------------------|---------------------|----------------------|----------------------|---------------------|---------------------|----------------------|----------------------|----------------------|
| | PIDAQ | | DSC | | SI | | PI | | AC | |
| | unadjusted | Adjusted | unadjusted | adjusted | unadjusted | adjusted | unadjusted | adjusted | unadjusted | adjusted |
| Gender | | | | | | | | | | |
| Males (ref) | - | - | - | - | - | - | - | - | - | - |
| Females | 1.68 (1.42-1.97)* | 1.74 (1.45-2.10)* | 0.71 (0.61-0.84) | 0.69 (0.58-0.83)* | 1.12 (0.95-1.3) | 1.12 (0.94-1.34) | 1.58 (1.34-1.86) | 1.70 (1.41-2.1)* | 1.94 (1.65-2.27)* | 1.93 (1.61-2.31)* |
| Grade | | | | | | | | | | |
| Intermediate School (ref) | - | - | - | - | - | - | - | - | - | - |
| High School | 0.97 (0.83-1.14) | 1.1 (0.81-1.48) | 1.1 (0.94-1.3) | 0.95 (0.71-1.28) | 0.87 (0.74-1.02) | 0.97 (0.72-1.31) | 0.91 (0.77-1.07) | 1.07 (0.79-1.45) | 1.33 (1.1-1.5)* | 1.10 (0.81-1.48) |
| Age (years) | 1.03 (0.99-1.03) | 1.06 (0.97-1.15) | 0.95 (0.91-0.99) | 0.94 (0.87-1.02) | 1.04 (0.99-10.9) | 1.04 (0.96-1.12) | 1.05 (1.01-1.10) | 1.1 (0.99-1.17) | 0.94 (0.90-0.99)* | 0.98 (0.91-1.07) |
| Father's education level | | | | | | | | | | |
| No/School (ref) | - | - | - | - | - | - | - | - | - | - |
| University | 1.39 (1.18-1.64)* | 1.34 (1.11-1.61)* | 0.78 (0.66-0.92) | 0.88 (0.73-1.05) | 1.14 (0.97-1.35) | 1.1 (0.88-1.26) | 1.31 (1.11-1.55) | 1.22 (1.01-1.47)* | 1.2 (0.99-1.39) | 1.25 (1.04-1.60)* |
| Mother's education level | | | | | | | | | | |
| No/School (ref) | - | - | - | - | - | - | - | - | - | - |
| University | 1.27 (1.08-1.50)* | 1.13 (0.94-1.36) | 0.72 (0.61-0.85) | 0.76 (0.63-0.91)* | 1.24 (1.05-1.45)* | 1.18 (0.98-1.41) | 1.26 (1.07-1.49) | 1.14 (0.94-1.37) | 1.08 (0.91-1.27) | 1.08 (0.90-1.30) |

*statistically significant

Figures

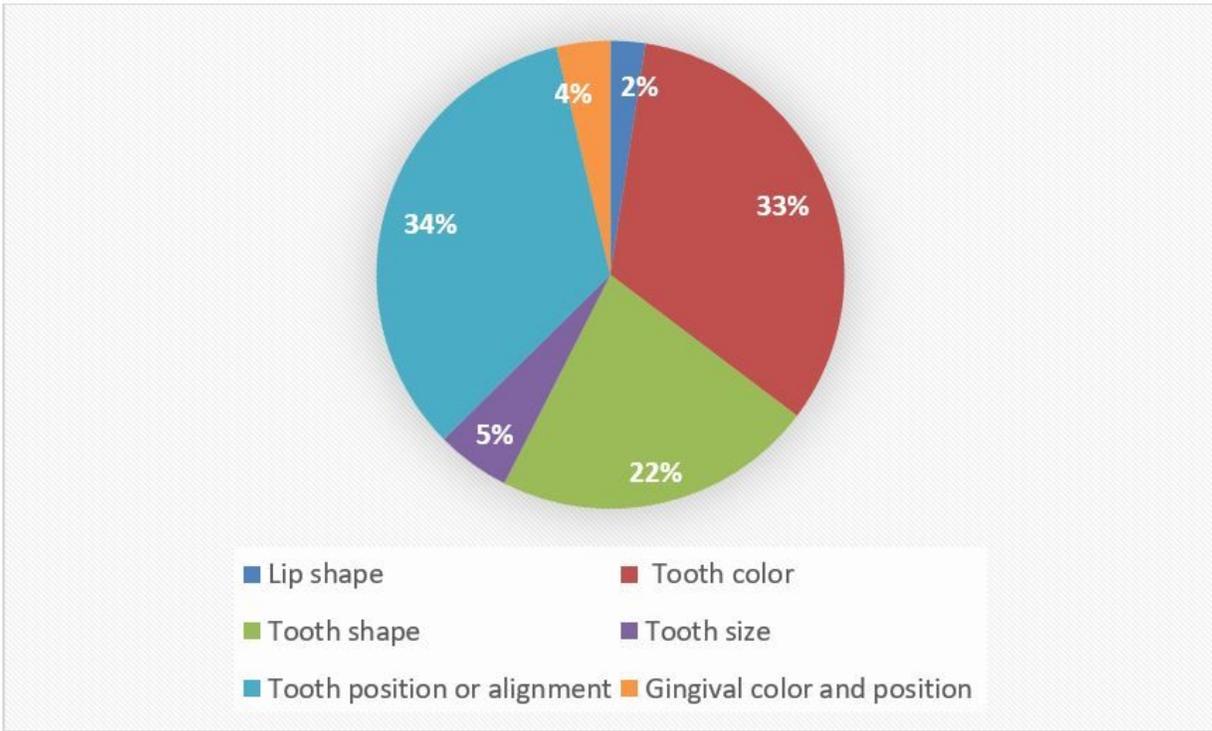


Figure 1

Reasons for participant's dissatisfaction about their smile appearance (%) (N=1022)

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [PIDEQquestionnaire.doc](#)
- [STROBEchecklistcrosssectional.doc](#)